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STEAM NAVIGATION, COMMERCE, FINANCE,

INSURANCE, BANKING, MINING, MANUFACTURES.

HENRY V. POOR, *Editor.*

SATURDAY, APRIL 9, 1859.

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SATURDAY, APRIL 9, 1859.

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American Railroad Journal.

PUBLISHED BY J. H. SCHULTZ & CO. NO. 9 SPRUCE ST.

New York, Saturday, April 9, 1859.

The Cumberland Coal Company Case.

This case is of much importance, in view of the decision rendered by the Supreme Court therein, and we think a brief history of the suit will be acceptable to our readers.

The question is, whether the purchase of corporate property by a director intrusted with the duty or responsibility of making the sale, is invalid, as being contrary to public policy.

The suit was brought by the Cumberland Coal and Iron Company, a mining company in Maryland, against Sherman, Dean and Postley. By the complaint it appears that early in the history of the company Sherman was elected a Director, and was subsequently appointed one of the Executive committee. In 1855, he offered a resolution at a meeting of the directors for the appointment of a committee to report what part of the Company's mining lands could be sold without disadvantage. The resolution was passed, and Sherman himself appointed chairman of the committee. They in due time reported, recommending a sale of 1,548 acres. At a subsequent meeting, a resolution was passed authorizing the President and Secretary to sell and convey a part of these lands; and thereupon a deed was executed of 1,215 acres to Sherman and Dean, for \$140,000. A contract was at

the same time executed with Sherman and Dean, securing to them important advantages in transportation over the company's road. The action of the President and Secretary in this matter was formally approved by the Board.

The complaint also averred in addition to the foregoing facts, that the price at which the lands were sold was grossly inadequate; and the rates permitted in the transportation contract above mentioned were so low as to afford no compensation to the company, and that the President made a false and fraudulent report of these dealings to the stockholders at their meeting.

Sherman and Dean, it is further alleged, in connection with Postley and others, organized the Hoffman Coal Company. They conveyed the lands and assigned the transportation contract to that company; and Sherman and Dean between them took 4,990 shares out of 5,000 shares into which the stock was divided.

The complaint prayed that the deed and contracts might be declared void and canceled. The plaintiffs now moved for an injunction pending the suit.

The affidavits to oppose the motion denied all charges of fraud, but did not deny the sale and conveyance and the making of the transportation contract, or that the price was inadequate. They alleged that the stockholders at their meeting in June 1857, ratified the dealings in question, but did not deny the President made the representation to the meeting charged in the complaint. They alleged that several of the stockholders had solicited Sherman to make the purchase, and that the lands could not have been sold if he had not been willing to do so.

The motion was brought before Hon. Justice DAVIES, who rendered an elaborate and lengthy opinion, which sets forth in detail various circumstances of the case, additional to those stated above, apparently indicating a fraudulent design on the part of the defendants; but which it will be unnecessary to repeat, as he arrives at a decision without considering the question of fraud. The opinion concludes as follows:

"The cases in reference to the dealings of an agent or trustee with the property, in reference to which his agency or trust exists, may be arranged into two classes.

First—Cases in which a trustee buys or contracts with himself or with several trustees, of which he is one, or a board of trustees of which he is one; and it will be seen by reference to the authorities hereinafter cited, that the incapacity to purchase applies to all these cases.

Second—Cases in which a trustee buys or contracts with his *cestui que trust*, who is *sui juris*, and incompetent to deal independently of the trustee in respect to the fund estate.

As to the first class of cases, the purchase is virtually at the option of the *cestui que trust*, without reference to the fairness or unfairness of the purchases or contracts. For the reasons before given the disqualification of the party purchasing or contracting is a conclusion of law and is absolute."

[His Honor here proceeds to an elaborate and searching review of the authorities both in English and American jurisprudence, and under the civil law, in support of the rule above stated, which he re-states as follows:]

It is thus seen that the rule by which agents or trustees are prohibited and rendered incapable of purchasing or dealing with property of their *cestui que trusts*, is one of universal application, fortified by a current of theory and high authorities, and is adhered to with stern and inflexible integrity; and the consequence of such dealing and purchasing is, that the agent or trustee is liable at any time, on the application of the *cestui que trust*, and as a matter of course, and without reference to the fairness or unfairness of the transaction, the adequacy or inadequacy of the price paid, or any other equities of the agent or trustee, to have the sale set aside. Such has been the uniform administration of the law in England and where the civil law prevails, and in this country. No reason is suggested why rules thus founded on the soundest morals, which have been maintained with such uniformity and steadiness, should never be relaxed. On the contrary, it is seen that every consideration arising from circumstances surrounding us, and the unparalleled multiplicity of corporations, who can act by trustee or agents, and the very large proportion of the wealth of the country invested in them, and placed under the control and management of agents and trustees, forcibly demands of courts of justice a firm adherence to these principles, and a stern application of them to every case coming within the sphere of their action. Nay, the rule, as applicable to managers or corporations, should in no particular be relaxed. Those who assume the position of directors and trustees assume also the obligations which the law imposes on such a relation. The stockholders confide to their integrity, to their faithfulness, watchfulness, the protection of their interests.

This duty they have assumed, this the law imposes on them, and this those for whom they act have a right to expect. They are not permitted to watch over their own interests; they cannot speak in their own behalf; they must trust to the fidelity of their agents. If they discharge these important duties and trusts faithfully, the law interposes its shield for their protection and defence: if they depart from the line of their duty, and waste or take themselves, instead of protecting, the property and interests confided to them, the law, on the application of those thus wronged or despoiled, promptly steps in to apply the correction, and return to the injured what has been lost by the unfaithfulness of the agents.

This right of the *cestui que trust* to have the sale vacated and set aside, when his trustee is the purchaser, is not impaired or defeated by the circumstances that the trustee purchased for another. [Citing *ex parte* Bennet. 10 Ves. 386.] It follows, therefore, that if defendant Sherman was incapacitated to purchase for himself, he was equally incapacitated to act for the defendant Dean; and if Dean were sole purchaser, the purchase would be set aside.

Neither are the duties or obligations of a director or trustee altered from the circumstance that he is one of a number of directors or trustees, and that this circumstance diminishes his responsibility, or relieves him from any incapacity to deal with the property of his *cestui que trust*. The same principles apply to him as one of a number as if he were acting as a sole trustee.

[His Honor next proceeds to decide that the action of the stockholders at the meeting of June, 1857, in ratifying the dealings with Sherman and Dean, was not such a ratification as prevents the company from maintaining their suit; for the general reason that they had not knowledge of all facts. He then states the final conclusion to which he arrives.]

I have arrived at the conclusion, entirely clear to my own mind, that this deed and contract cannot be sustained.

I have arrived at the result without considering the question of fraud raised in the complaint and denied by the affidavits. I have chosen to place my decision on higher and more satisfactory grounds. For the reasons I have stated, the plaintiffs having established a *prima facie* right to have the deed and contract case called and the lands sold reconveyed to them, it is my duty to restrain the defendants until the hearing of this cause, as asked for in the complaints and supplemental complaints.

The plaintiffs have the right to their real estate, or anything into which it has been transmuted.—It is, therefore, proposed to restrain the defendants from transferring the stock owned by them in the Hoffman Coal Company, which but represents the real estate of the plaintiffs, and the privileges and advantages secured by the transportation contracts.

The motion for injunction is therefore granted.

Pacific Railroad.

At the meeting of this company held in St. Louis on the 28th ult., the following gentlemen were elected Directors, viz: J. P. H. Gray, H. L. Patterson, James E. Yeatman, A. Meier, Geo. R. Taylor, Joseph Charless, Robert Campbell, Thomas Allen, Daniel R. Garrison, John M. Wimer, B. W. Glover, Robert Barth.

The report of the company made to the stockholders states that on the 4th of May last, there were 26 miles of new road opened from Jefferson City to California, in Moniteau county; and on the 25th of July following, 12½ miles additional of track was opened; making 37½ miles of new track added to the Pacific road during the year. In addition to this, 19 miles of track on the Southwest Branch, from Franklin to St. Clair station, has been opened. A length of six additional miles on the Southwest Branch is ready for the

rails, and will be opened in a few weeks. It is expected also that by the first of October next, the road will be opened to Jamestown, a distance of 104 miles from St. Louis.

The receipts of Transportation Department from opening of road to March 1, 1859, were \$2,006,824 02

Total expenses of Transportation Department to same date 1,270,273 54

Cash balance \$736,550 48—which sum has been applied to the payment of interest on State bonds, and has reduced the interest account on the books of the company to that amount.

It is estimated that it will require \$3,250,000 to complete the road to Kansas City.

TREATISE ON THE PRINCIPLES OF CIVIL ENGINEERING

AS APPLIED TO THE

CONSTRUCTION OF WOODEN BRIDGES.

By S. S. Post, Civil Engineer,
And late Chief Engineer of the N. Y. & Erie R. R.

§ 1. Force is an agency which, applied to a load, tends to impart motion to it, or to retard it, or to bring it to a state of rest.

§ 2. When two or more forces acting upon a body neutralize each other, the result is an *equilibrium*, called *pressure*.

§ 3. Two weights or pressures are *equal* when one may be substituted for another with similar results.

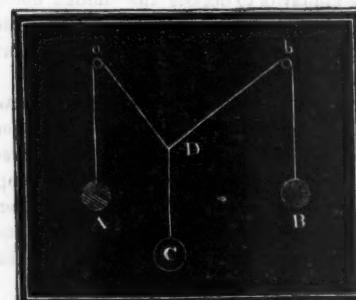
§ 4. If two or more forces act upon the same point, their united effect is called the *resultant* of these forces.

§ 5. The several forces, whose combined effect is equivalent to a single force are called the *components* of that force.

§ 6. The resultant is mechanically equal to its components, and can be substituted therefor; or, the components for the resultant, without change of condition.

This proposition may be illustrated as follows:

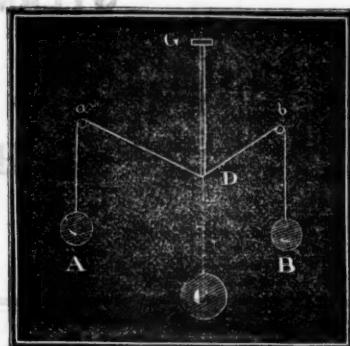
Fig. 1.



§ 1. Let a fine line be passed over two pulleys (a and b) fixed against a vertical plane or wall, and let known weights (A and B) be attached to the ends of the line. At some point (D) in this line, between the pulleys, knot another line with a third weight (C) attached. If the weight C be less than the sum of the other weights (A and B) the knot will assume a certain position (D), and it will be found to return to the same point as often as the experiment shall be tried, unless some one or more of the weights be changed.

According to the foregoing definitions the weights (A, B and C) are in equilibrium. A and B, as components, act upon the point D, with the same effect as their resultant C. But, the force A is equally the resultant of B and C, as components: and B may, also, be considered the resultant of A and C.

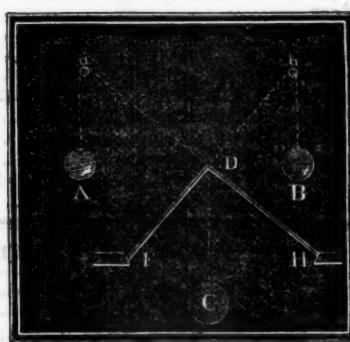
Fig. 2.



b. If a rod be fixed vertically between the point D and the ceiling—or some other immovable object (G), then by removing the weight C the point D remains in the same position as before.

The pressure upon the rod will be equal to the weight C removed, and is the resultant of the weights A and B.

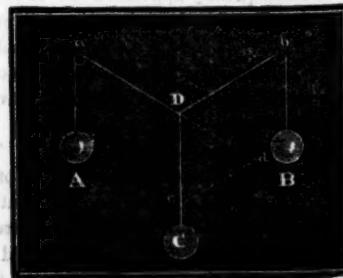
Fig. 3.



c. The point D, instead of being supported by weights, acting in the direction Da and Db, may be sustained by rods or struts (DF and DH,) pressing against it. The same weight (C) being suspended from the point D, the rod DF will sustain a force equal to that which was in the former case exerted by the weight B in the direction Db; and DH a force equal to that which was exerted by the weight A in the direction Da.

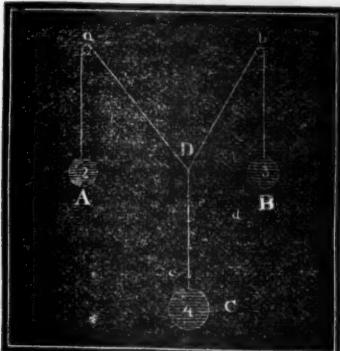
§ 7. If three forces act upon one point, and keep it at rest, then those three forces are proportional to the three sides of a triangle, to which sides, also, the directions in which they act are parallel.

Fig. 4.



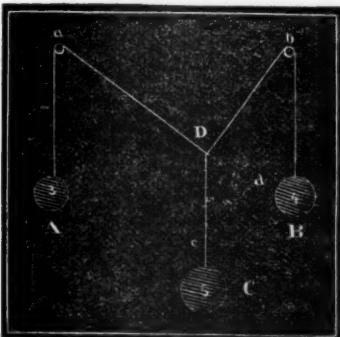
d. Let the weights (A, B and C) be equal. It will be found that the knot (D) will take such a position that the angles about it ($\alpha D b$, $\alpha D c$ and $b D c$) will be equal. By projecting the lines or cords upon the wall, producing $a D$ to any point d , and drawing $c d$ parallel to $D b$, it will also be found that the sides of the triangle ($c D d$) are equal.

Fig. 5.



e. Let the weights (A, B and C) be in proportion to each other respectively, as 2, 3 and 4.—The knot will assume the position D. Upon DC, with any scale, lay off 4 and construct the triangle ($c D d$), by producing $a D$ to d , and drawing $c d$ parallel to $D b$. It will be found that, upon the application of the same scale, 2 will be the measure of the side $D d$, and 3 of the side $c d$.

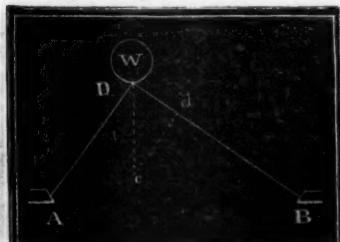
Fig. 6.



f. Let the weights (A, B and C) be to each other as 3, 4 and 5, and, constructing the triangle as before, it will now be found that the sides will be in proportion to 3, 4 and 5.

§ 8. It follows, then, if a body be kept at rest by three forces, and any two of them be represented in magnitude and direction by two sides of a triangle, the third side of the same triangle will represent the magnitude and direction of the other force.

Fig. 7.



g. The weight (W) may act upon the point D

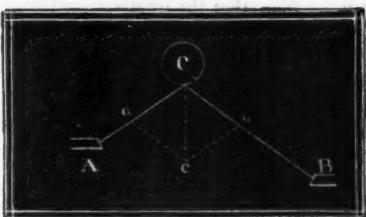
by pressure, instead of being suspended, as in the last case. It is evident that if the weight (W) acts upon the point D in the same direction, and with the same force, as if suspended, then it must require the same force to be exerted by AD and BD to sustain it. If, therefore, it be required to know what force each of the supports (AD and BD) must sustain, in consequence of the pressure of the weight (W), draw the vertical line $D c$ of a convenient length to represent the weight (W), then from the point c , draw $c d$ parallel to AD , and, as in the former case, $c d$ will represent the force which must be exerted by AD , and $D d$ will represent that which must be exerted by BD .

§ 9. The most common direction of any force is that of gravity, acting perpendicularly toward the earth.

§ 10. When the line representing the direction and force of gravity, or any other force, bisects the angle subtended by the lines, representing the direction of two other forces, or pressures, those two pressures are equal.

This principle applies especially in the most simple form of truss for roofs and bridges.

Fig. 8.

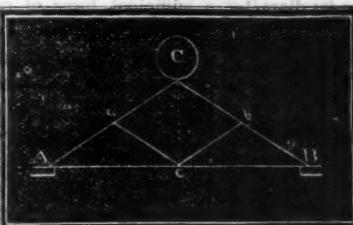
TABLE I.
Direct cohesion of different kinds of Timber, Iron, etc.

Kind of Material.	Specific Gravity.	Cohesion of a square inch, in lbs.	Remarks.	Authority.
Ash timber . . . . .	.602	17,077	Mean of 6 experiments.	Barlow.
Beech do. . . . .	.702	11,467	Do. 3 do.	do.
Chestnut do. . . . .	.610	10,500	.....	Bevan.
Ash . . . . .	.753	14,130	.....	Tredgold.
Beech . . . . .	.690	12,225	.....	do.
Chestnut dry . . . . .	.535	10,656	.....	do.
Cedar . . . . .	.540	11,400	.....	Bevan.
Elm . . . . .	.544	9,720	.....	Tredgold.
Fir . . . . .	.581	12,203	Mean of 12 experiments.	Barlow.
Locust . . . . .	....	20,100	.....	Muschenbroek.
Oak, Am. white . . . . .	....	14,054	.....	Tredgold.
Oak, American . . . . .	.867	10,253	Mean of 6 experiments.	Barlow.
Oak, English . . . . .	.845	10,389	(Pinus strobus)	Tredgold.
Pine, white . . . . .	.460	11,835	(Pinus resinosa)	do.
Do. pitch . . . . .	.660	9,796	.....	Rondelet.
Norway Pine . . . . .	....	7,287	.....	Bevan.
Do. do. . . . .	....	14,300	.....	do.
Poplar . . . . .	.360	7,200	.....	Tredgold.
Spruce, Am. white . . . . .	.465	10,296	(Pinus alba)	do.
Do. Norway . . . . .	.512	12,346	Christiana white deal.	do.
French bar iron . . . . .	....	61,041	.....	Perronet.
German do. do. . . . .	....	69,133	.....	Muschenbroek.
Missouri	7,771	47,909	Mean of 22 experiments.	
American { Tennessee	7,805	52,099	do. 21 do.	
bar iron. { Pennsylvania	7,740	58,400	do. 15 do.	
Salisbury	7,740	58,009	do. 40 do.	
English bar iron	7,690	59,108	do. 5 do.	
Russian do. do.	7,801	76,069	do. 5 do.	
Swedish do. do.	7,478	58,184	do. 2 do.	
Phillipsburg wire	{	{ 84,186 .333 } in diam. 13 do.		
Cast steel . . . . .	....	{ 73,888 .190 } in diam. 5 do.		
American cast iron . . . . .	....	{ 89,162 .156 } in diam. 5 do.		
English do. do.	7,069	130,681 1 do.		
		Mean of 76 experiments.	Hodgkinson.	

§ 14. When a force tends to compress the material in the direction of its length, this force is said to act by *compression* or *thrust*, and the ma-

terial so acted upon, is variously designated, as a *column*, *strut*, *brace*, *rafter*, *straining beam*, etc., etc.

Fig. 9.



Ca and Cb will be found to be equal to each other without regard to the lengths of the braces, or rafters.

§ 11. When a force acts upon timber, iron or other material, in the direction of its length, in such manner as tends to pull it asunder, this force is said to act by *tension*; the material thus acted upon is sometimes called a *tie*, *tie-beam*, *king-post*, *suspension rod*, etc., etc., and the strength of the material to resist this force or strain, is called its *direct cohesion*.

§ 12. The direct cohesion of timber and iron is ascertained by suspending vertically a rod of known dimensions by one end, and attaching weights to the other, until it breaks. It is usually expressed by the number of pounds necessary to tear asunder pieces an inch square.

§ 13. A few results are collected together in the following table.

§ 15. A piece of timber exposed to compression, yields to the force differently, according to the proportion between its length and sectional area. If a cylinder have its length more than eight or ten times its diameter, a sufficient force of compression acting in the direction of its length will bend and break it near the middle of its length.

When the length is less, in proportion to the diameter, the piece will split in several places, and bulge out in the middle; or, if the length be very short in proportion to the diameter, the piece will be crushed.

§ 16. The resistance to compression under the various circumstances cannot be ascertained, accurately, without an expensive apparatus, and not many reliable experiments of this kind appear to have been made. A few, however, which seem to be well authenticated give the following results.

TABLE II.

Kind of Material.	Length in feet.	Breadth in inches.	Thickness in do.	Weight applied.	Result.
Elm.....	1	1	1	10,331	Crushed.
American Pine.....	1	1	1	5,400	do.
English Oak.....	1	1	1	3,860	do.
Do. do. do.	1	1	1	5,147	do.
African do.....	3	3	3	60,480	do.
Oak seasoned.....	2½	2½	2½	7,856	Prod.deflect'n.
Do.	2½	2½	2½	15,631	Broke.
Do.	4½	2½	2½	6,298	Prod.deflect'n.
Do.	4½	2½	2½	11,844	Broke.
Do.	6½	2½	2½	3,277	Prod.deflect'n.
Do.	6½	2½	2½	7,244	Broke.
Do.	6½	2½	2½	26,381	Prod.deflect'n.
Do.	8½	6.22	4	5.15 4.17	50,448 Broke.
Ash.....	1	1	1	9,368	Crushed.
Beech.....	1	1	1	9,363	do.
Birch.....	1	1	1	11,668	do.
Cedar.....	1	1	1	5,768	do.
Mahog.Spanish.....	1	1	1	8,198	do.
Oak Quebec.....	1	1	1	5,982	do.
Poplar.....	1	1	1	5,124	do.
Spruce.....	1	1	1	6,844	do.
Sycamore.....	1	1	1	7,082	do.
Walnut.....	1	1	1	6,645	do.
Yellow Pine.....	1	1	1	5,375	do.

§ 17. When a force acts upon a material transversely to its length, either perpendicularly or obliquely, it is said to act laterally, or to produce a *transverse strain*.

The material, when supported horizontally, and acted upon vertically, is usually denominated a *Beam*.

§ 18. The *transverse strength* of a beam, is its power to resist fracture when laid horizontally upon supports at its extremities, and loaded with a weight, or weights, at some point or points between its bearings. The simplest case is when a weight is placed upon, or suspended from, the middle of the beam.

§ 19. The *strength of beams* subjected to transverse strains, will depend, not only upon the absolute strength of the timber, but, also, upon the *length, breadth and depth*.

By numerous experiments, the true relations existing between the dimensions and the strength of beams, have been discovered.

§ 20. The strength of a beam is increased when the breadth or depth is increased, and the proportion is said to be *direct*; but if the length of the beam be increased, the strength will be diminished.

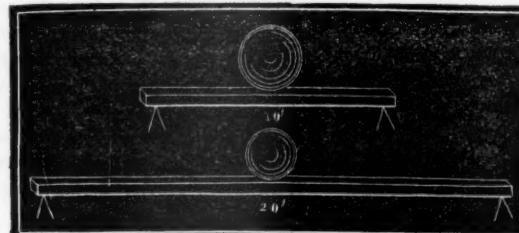
ed, and the proportion between them is then said to be *inverse*.

§ 21. The strength of a beam supported at both ends and loaded in the middle, is *inversely as its length*.

Consequently the products of length into breaking weight, will be the same for all beams of the same breadth, depth and kind of material.

i. If a weight of 9,570 lbs., resting upon the middle of a white pine beam 10 feet long and 6

Fig. 10.

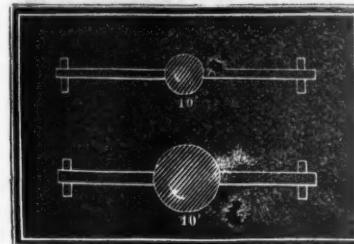


inches square, produce fracture; then one-half the weight, or 4,735 lbs., will break a beam 20 feet long, the other dimensions and the material being the same; for $10 \times 9,570 = 20 \times 4,735$.

§ 22. The strength of a beam, supported at both ends and loaded in the middle, is in *direct proportion to its breadth*.

It follows then, that the quotients, arising from the division of the breaking weight by the

Fig. 11.



breadth, will be equal in all cases of beams of the same length, depth and kind of material.

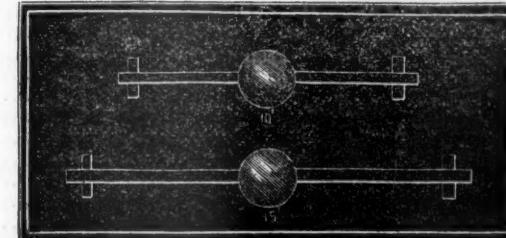
j. A white oak beam 10 feet long, 6 inches deep and 3 inches in breadth, broke with a weight of 7,668 lbs. on the middle. Had the same beam been 6 inches in breadth, the weight sustained would have been double, or 15,336 lbs.:

for 3 inches : 6 inches :: 7,668 lbs. : 15,336 lbs.
and $\frac{7,668}{3} = \frac{15,336}{6}$.

§ 23. The strength of a beam supported at the ends and loaded in the middle, is *inversely as its length*, and *directly as its breadth*. Therefore: the product of length into the breaking weight divided by the breadth, gives a quotient which will be the same for all beams of the same depth and material.

k. A white oak beam 10 feet long, 6 inches deep and 4 inches in breadth, broke with 10,224

Fig. 12.



lbs. A beam of the same depth and material, 15 feet long and 6 inches in breadth, will break under the same weight:

$$\text{for } \frac{10 \times 10,224}{4} = \frac{15 \times 10,224}{6}$$

§ 24. The strength of a beam of a given length, and breadth, is *as the square of its depth*.

The quotients, arising from the division of the breaking weights by the square of the depth, will then be the same in all cases where the lengths, breadths and material are the same.

The length of a beam is usually expressed in *feet*,—the breadth and depth in *inches*. The square of the depth is, then, the depth in inches multiplied by itself.

l. A beam of spruce 12 feet long, 3 inches broad and 6 inches deep, broke with 4,338 lbs.

A beam 9 inches deep,—the other dimensions and the material being the same—will break with 9,760 lbs.

If 12 inches deep, it will break with 17,352 lbs.; or if 15 inches deep, with 27,112½ lbs. weight: for

Fig. 13.



$$\frac{4,338}{6 \times 6} = \frac{9,760}{9 \times 9} = \frac{17,352}{12 \times 12} = \frac{27,112\frac{1}{2}}{15 \times 15}$$

m. The strength of one beam is to the

strength of another, of equal length and of the same material, as the product of the breadth into the square of the depth of the former, is to the product of the breadth into the square of the depth of the latter.

Consequently, dividing the breaking weight, by

the product of the breadth into the square of the depth, gives a quotient which will be the same for all beams of the same length and material.

III. A beam of Elm 15 feet long, 5 inches wide and 10 inches deep, broke with 18,000 lbs.

Another beam of the same timber, and of the

same length, —4 inches wide and 12 inches deep, will break with 20,736 lbs: for

$$\begin{aligned} 5 \times 10 \times 10 : 4 \times 12 \times 12 &:: 18,000 : 20,736, \text{ and} \\ 18,000 &= 20,736 \\ 5 \times 10 \times 10 &= 4 \times 12 \times 12. \end{aligned}$$

§ 26. The strength of beams, supported at both ends and loaded in the middle, is *inversely as their lengths*, and *directly as their breadths*

Fig. 14.

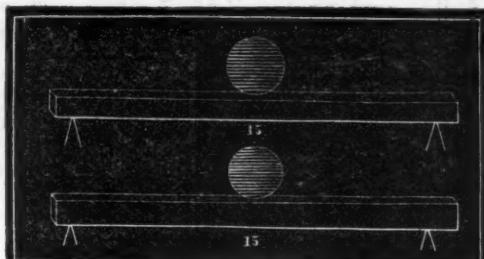
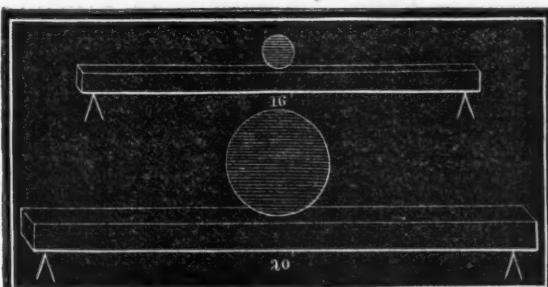


Fig. 15.



depth, the quotient will be the same, for all beams of the same material.

n. A beam of Southern Pine 16 feet long, 9 inches deep and 4 inches in breadth, broke with 15,957 lbs.

Another beam of the same timber, 20 feet long, 15 inches deep and 10 inches in breadth will break with 88,650 lbs.: for

$$\begin{aligned} 4 \times 9 \times 9 : 10 \times 15 \times 15 &:: 15,957 : 88,650, \\ 16 &= 20 \\ \text{and } \frac{16 \times 15,957}{4 \times 9 \times 9} &= 20 \times 88,650. \end{aligned}$$

§ 27. When the whole load is applied at any point of a beam, between its supports, the weight producing fracture will be *inversely as the products of the two segments* of the beam:—that is, of the distances from the weights to the two points of support of the beam.

o. A stick of chestnut 12 feet long, 6 inches in breadth and 8 inches deep, broke with 14,400 lbs. applied at the centre.

Required the breaking weight if applied at one foot from the centre. Then

$$7 \times 5 : 6 \times 6 :: 14,400 : 14,811 \text{ lbs.}$$

Required the breaking weight, if applied at two feet from the centre,

$$8 \times 4 : 6 \times 6 :: 14,400 : 16,200 \text{ lbs.}$$

If applied at 3 feet from the centre,

$$9 \times 3 : 6 \times 6 :: 14,400 : 19,200 \text{ lbs.}$$

§ 28. The lateral strength of a beam when uniformly loaded throughout its length, will be twice as great as when loaded in the middle.

the product of the breadth into the square of the depth, gives a quotient which will be the same for all beams of the same length and material.

III. A beam of Elm 15 feet long, 5 inches wide and 10 inches deep, broke with 18,000 lbs.

Another beam of the same timber, and of the

same length, —4 inches wide and 12 inches deep, will break with 20,736 lbs: for

$$\begin{aligned} 5 \times 10 \times 10 : 4 \times 12 \times 12 &:: 18,000 : 20,736, \text{ and} \\ 18,000 &= 20,736 \\ 5 \times 10 \times 10 &= 4 \times 12 \times 12. \end{aligned}$$

§ 31. The lateral strength of square beams, of the same length and material, are as the cubes of one side—that of round beams or cylinders, as the cubes of their diameters.

(To be continued.)

Coal Burning on the Baltimore and Ohio Railroad.

We give below an extract from the report of the Master of Machinery on the Baltimore and Ohio railroad, accompanying the Report of the company, on the use of Coal on Locomotive Engines.

"The introduction of Coke as a fuel for our passenger engines, has been attended with entire success, resulting in very economical and efficient operations of these machines. A series of experiments has been made with raw coal upon the passenger engines, with results of a satisfactory character; showing that our passenger trains, containing five cars, can be drawn over the 1st divisions of the road, overcoming grades of 88 feet per mile, with a consumption of 26 lbs. of coal per mile run—costing, including all transportation charges on the coal, three and six-tenths cents per mile."

The experiments with fuel have all been made with the same engine, No. 283. Their results were as follows:

"Cost per mile on the Mail and Express trains, 5 cars:

With Wood,	7 8-10 cents.
" Coke,	5 6-10 "
" Coal,	3 6-10 "

According to this calculation, the cost of running a train as above, for fuel alone, to Harper's Ferry from Baltimore, 81 miles,

With Wood, would be	6.31
" Coke, " "	4.58
" Coal, " "	2.91
To Wheeling, 379 miles,	
With Wood would be	29.56
" Coke, " "	21.22
" Coal, " "	13.64

A saving between coal and wood of about 55 per cent. A very important item, and must command the attention of the railroad interest all over the United States, at an early day. It must be borne in mind, also, that this is putting down wood at its cost along the line of the Baltimore and Ohio road, about \$2 per cord. The Eastern roads, where wood is scarce, are paying three times this price. The result finally must be to greatly increase the demand for coal, from the Cumberland regions particularly, as companies are now endeavoring to reduce their expenses. If the fuel expense can be reduced 55 per cent. here is a heavy item of saving."

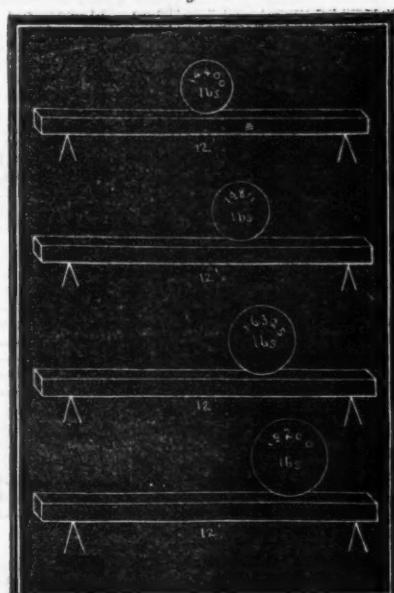
The Master of Machinery says, further:

"Fourteen of the Passenger engines are now consuming mineral fuel; others will be altered as soon as the large accumulation of wood on the Western division is sufficiently reduced to render it advisable."

Railroads in Egypt.

The railway to Suez being now completed, Egypt possesses the following lines:—From Alexandria to Cairo, 131 miles; to Mariouth, 17; to Meks, 6; to Rassateen, 3. From Tanta to Samanud there is a rail for 21 miles; from Cairo to Suez 91; to Barragod 15; to Beni Sueff 76—in all, 360 miles. Besides these there are smaller branches, from Cairo to the citadel and Kasr Nin. From Samanud to Mansoura and Damietta, from Damanhour to Aste, which last extends to Rosetta. The exact mileage of these minor, but still important lines is not yet accurately known. The bridge of Kasr Zayat across the Nile is a splendid work, and must be finished by June, 1860. It bids fair to be one of the wonders of the world. When the railway system is properly developed there will be a saving of 20,000*l.* per annum in the expense of forwarding the Indian mail.—*Levant Herald.*

Fig. 16.



§ 29. When both ends of a beam are firmly fixed, as in a solid wall, the lateral strength will be to that of a beam with its ends only supported, as 3 to 2.

§ 30. The lateral strength of a beam with its narrow face upward, is to its strength with its broadest face upward, as the breadth of the broadest face, to the breadth of the narrow face.

Railway Share List,

Compiled from the latest returns—corrected every Wednesday—on a par valuation of \$100.

NAME OF COMPANY.	Length of Rail	Capital paid in.	Debt	Total cost of road & equip't.	Gross Earnings for last official year.	Net Earnings for do.	Dividend for do.	Price of Shares.	NAME OF COMPANY.	Length of Rail	Capital paid in.	Debt	Total cost of road & equip't.	Gross Earnings for last official year.	Net Earnings for do.	Dividend for do.	Price of Shares.	
Atlantic & St. Lawrence	149	2,494,900	3,482,000	6,923,941	545,752	150,224	6	-----	Brunswick and Florida, Ga.	30	151,887	463,648	538,649	In progr.	-----	-----	-----	
Androscog. & Kennebec	55	457,909	1,835,305	2,210,947	159,513	83,368	none	-----	Soutl. Western	143	1,892,100	441,292	2,264,323	366,714	208,771	9	-----	
Kennebec & Portland	72	1,107,526	1,763,738	2,871,261	218,255	-----	-----	-----	Tennessee and Alabama	30	309,754	626,889	679,906	53,775	29,405	-----	-----	
Portl. Sacq. & Portsm'th	51	1,396,400	-----	1,389,373	263,717	120,009	6	90	Tennessee and Mississ.	64	757,640	611,812	1,161,152	161,101	99,888	-----	-----	
Boston, Concord & M'nt'nh	93	1,000,000	1,104,586	2,848,977	322,767	174,025	-----	-----	Memphis and Charlest'n	287	2,228,177	3,495,288	5,672,470	642,022	334,504	-----	-----	
Cheshire	54	1,000,125	899,313	1,179,687	355,629	113,077	5	52	Mobile and Ohio	308	6,734,839	2,066,459	10,701,428	551,382	278,428	-----	-----	
Concord	36	1,500,000	8,242	1,412,576	317,056	125,864	6	52	Miss. Central	89	1,675,474	928,798	2,503,098	115,679	56,798	-----	-----	
Northern, N. H.	92	3,068,400	406,288	3,068,400	355,880	186,966	4	47 1/2	Southern (Miss.)	82	1,000,000	1,400,000	2,400,000	264,255	150,789	-----	-----	
Conn't & Passumps. Riv.	90	1,000,000	800,000	1,784,146	177,588	78,401	none	-----	N.O., Opeoluas & G.W.	80	2,800,000	750,000	3,477,526	284,173	127,460	-----	-----	
Butland & Burlington	117	2,233,376	4,158,765	4,584,008	332,215	41,088	none	-----	N. O. Jackson & G. N.	206	4,035,000	1,516,610	7,142,561	189,003	-----	-----	-----	
Vermont and Canada	47	1,350,000	-----	1,380,695	Leas'd to Vt Cent	127,339	none	-----	Vicksb., Shrevep., Tex.	21	883,766	103,285	992,051	In progr.	-----	-----	-----	
Vermont Central	122	5,000,000	5,276,299	8,402,056	705,838	-----	-----	-----	East Tennessee and Ga.	111	1,192,974	1,735,669	2,703,428	227,363	104,992	-----	-----	
Boston and Lowell	74	1,830,000	438,920	2,412,251	435,883	171,382	6	93	East Tennessee and Vt.	130	626,075	1,728,684	3,208,138	61,344	39,063	-----	-----	
Boston and Maine	43	3,160,000	239,720	8,534,458	544,176	245,194	6	95 1/2	Nash. and Chattanooga	159	2,363,005	1,632,793	3,986,703	641,582	219,263	-----	-----	
Boston and Providence	44	4,500,000	599,974	4,843,779	1,019,149	388,513	6	69 1/2	Covington & Lexington	98	1,334,860	3,065,917	4,091,604	426,408	220,906	-----	-----	
Cape Cod	47	681,690	291,007	1,031,626	122,960	39,899	-----	Lexington and Frankfort	29	430,065	156,899	558,255	65,307	45,718	6	-----		
Connecticut River	50	1,601,110	275,772	1,801,244	267,710	65,096	3	7	Lexington and Danvile	13	694,444	71,000	765,500	In progr.	-----	-----	-----	
Eastern, Mass.	22	2,683,400	441,373	5,082,607	616,156	272,479	-----	Louisville and Frankfort	65	741,069	625,216	1,505,095	245,750	109,066	6	-----		
Fitchburg	67	3,640,000	100,000	8,872,921	668,974	250,833	6	94 1/2	Atlantic & Gt. Western	86	866,939	77,494	613,231	In progr.	-----	-----	-----	
N. Bedford and Taunton	21	500,000	none	641,580	168,926	27,527	6	-----	Bellefontaine and Ind.	118	1,874,395	315,237	2,998,392	348,452	120,586	-----	-----	
Old Co'y and Fall River	69	8,015,100	260,100	3,362,049	683,357	305,140	6	101 1/2	Olev. Col. and Cincin.	141	4,748,2	90,400	4,752,320	1,149,741	51,740	9 1/2	-----	
Vermont and Mass.	69	2,232,641	1,019,148	2,814,975	240,133	52,267	none	-----	Cleveland and Toledo	200	3,633,712	4,225,558	7,19,016	980,292	433,790	26	-----	
Western, Mass.	156	5,150,000	5,859,030	10,495,906	2,117,982	889,763	8	103	Clev. and Mahoning	65	1,926,953	In progr.	-----	-----	-----	-----	-----	
Worcester and Nashua	46	1,141,000	205,566	1,361,271	218,588	82,720	4	46	Olev. and Mahon.	133	2,780,744	3,043,992	5,637,466	581,871	309,518	-----	-----	
Prov'ce and Worcester	43	5,110,020	300,000	1,781,048	344,773	155,044	7	87	Olev. and Pittsburg	95	3,000,000	1,495,548	4,040,978	1,251,533	581,454	15	-----	
Hartford and N. Haven	72	2,589,000	944,000	3,329,602	768,065	340,835	10	10 1/2	Olev. and A-habula	60	2,155,800	1,526,092	3,130,315	487,421	260,763	53	-----	
Hart'd, Prov. and Fishkill	122	1,936,246	2,182,692	4,305,938	274,428	112,325	none	-----	Cin. Hamilt'n & Dayton	131	2,421,176	3,782,040	5,698,210	223,506	30,288	-----	-----	
Housatonic	74	2,000,000	423,855	2,438,447	318,476	109,344	none	-----	Columbus and Xenia	55	1,490,450	149,000	1,582,475	403,212	181,688	10	-----	
Saugatuck	67	1,031,416	524,244	1,860,723	237,416	114,237	-----	Dayton, Xen., & Belpre	63	437,832	22,668	422,658	860,494	In progr.	-----	-----		
N. York and N. Haven	62	2,980,838	2,232,240	5,258,232	1,157,055	254,569	3	45	Dayton and Michigan	140	1,076,602	393,011	1,186,826	105,977	-----	-----	-----	
N. Haven and N. London	50	738,256	761,462	1,450,193	88,007	30,318	-----	Dayton and Western	36	310,000	700,481	1,035,173	125,940	65,253	-----	-----		
N. London, W. & Palmer	66	510,700	1,052,000	1,603,230	120,671	51,544	none	-----	Eaton and Hamilton	42	469,763	83,668	1,176,163	140,936	50,008	-----	-----	
Norwich and Worcester	66	2,122,300	234,188	2,598,671	265,417	44,547	-----	Little Miami	65	2,981,282	1,266,000	3,925,157	774,442	290,123	10	88		
Albany Northern	32	439,000	1,625,098	1,840,695	117,716	9,904	-----	Sandusky, Dayton & Cincin.	171	2,697,090	3,368,006	6,065,090	682,614	-----	-----	-----		
Black River and Ulrica	35	643,330	317,353	974,323	In progr.	-----	Central Ohio	138	1,627,905	6,223,656	6,496,822	570,092	164,697	-----	-----			
Buffalo, Corn. and N. Y.	100	1,487,874	501,183	2,819,096	172,476	66,333	none	Pittsb. Ft. Wayne & Chicago	43	6,247,040	9,822,560	14,279,704	1,546,369	577,787	10	-----		
Buffalo and N. Y. City	92	798,439	526,849	3,401,368	288,392	31,896	none	Pittab', Maysw's & Cin.	50	371,350	31,000	390,933	In progr.	-----	-----	-----		
Buffalo and St. Line	69	1,300,000	1,040,000	2,494,364	679,750	355,763	10	45	Sandy', Manu' & New'k	127	1,350,000	2,206,367	3,562,357	328,858	164,479	-----	-----	
Canandaigua and Elmira	98	1,816,000	2,279,854	3,498,832	261,375	98,000	-----	Scioto & Hocking Valley	56	403,975	50,050	408,888	888,858	In progr.	-----	-----		
Canandaigua & Niagara Fe	65	877,000	506,889	1,187,562	135,433	48,849	none	Spring. Mt. Vernon & P.	113	1,000,000	950,000	2,194,000	In progr.	-----	-----	-----		
Chautauqua & Susquehanna	144	3,758,456	9,250,362	12,737,898	1,902,828	688,880	-----	Tol. Wabash & St. Louis	242	2,965,100	7,577,500	10,542,600	Recently opened.	-----	-----	-----		
Hudson River	144	3,758,456	300,000	647,193	2,555,986	325,1	-----	Oin, Log, and Chicago	255	4,196,679	1,006,125	2,060,433	In progr.	-----	-----	-----		
Long Island	10	3,000,000	-----	-----	-----	Evansv. & Crawford	109	988,061	1,270,872	2,158,713	249,863	124,140	-----	-----	-----			
New York Central	55	24,182,400	14,402,635	30,732,512	5,635,413	3,041,120	8	10 1/2	Ind. and Cincinnati	88	1,684,809	1,548,584	3,029,959	491,743	249,622	7	-----	
New York and Erie	46	11,000,000	28,031,465	34,462,324	5,742,607	1,454,032	none	Ind. & Indiana Central	66	612,350	1,261,179	1,908,911	368,189	204,685	-----	-----		
New York and Harlem	133	5,717,100	4,402,470	8,282,498	2,758,750	1,040,393	-----	Ind. Clev. & Pittsburg	88	835,791	1,07,424	1,824,425	253,19	55,248	-----	-----		
Northern, N. Y.	118	1,633,022	4,406,874	5,470,714	520,153	135,754	1	12 1/2	Jeffersonville	78	1,014,252	644,000	1,830,576	222,737	94,318	-----	-----	
Oswego and Syracuse	35	306,130	213,026	752,035	752,035	149,375	8	-----	Madison and Indianapolis	87	1,647,700	1,336,816	2,984,516	260,214	118,628	-----	-----	
Bevidore Delaware	25	467,200	140,000	284,794	260,000	42,600	7	-----	New Albany and Salem	285	6,235,121	5,281,848	8,465,827	371,402	90,000	-----	-----	
Bunden and Atlantic	60	3,485,000	1,550,565	1,738,171	117,898	45,542	none	Terre Haute and Ind.	73	1,361,450	250,125	1,585,800	481,272	206,079	10	-----		
New Jersey Central	30	3,485,000	8,000,000	788,344	3,600,017	911,611	584,961	10	136	Chicago and Rock Isld'	182	5,244,000	1,734,318	6,628,272	1,886,193	850,039	65%	-----
North Jersey Central	63	2,000,000	3,692,528	6,521,329	682,940	367,193	-----	Chicago, Burl. and Quincy	210	4,631,540	3,852,970	8,042,428	1,605,167	81,767	48	-----		
Morris and Essex	44	1,57,900	600,046	1,700,000	85,000	45,000	-----	Detroit and Milwaukee	185	833,000	1,926,964	1,966,969	Recently opened.	-----	-----	-----		
Alleghany Valley	67	1,700,000	3,940,000	3,640,000	219,568	52,450	-----	Mich. Central	282	6,057,840	8,366,639	12,847,238	2,483,758	764,916	8	50%		
Otawha, Wil. & Erie	63	1,940,000	3,261,274	3,640,000	261,670	85,942												

Railroad Bonds.

NAMES OF COMPANIES. (The following quotations are as- cluded interest.)	Amount of Loan.	Description of Bonds.	Rate Int.	Interest pay- able.	Where payable.	Due.	Offered.	Asked.
Alabama and Tennessee River	\$833,000	1st mortgage, convertible	7	1st Jan. 1st July	N.Y.	1872	80	
Buffalo and State Line	500,000	Do, convertible	7	April, October	"	1866	90	98
Bellefontaine and Indiana	600,000	Do, convertible	7	Jan'y, July	"	1866	75	
Do. do.	200,000	Real estate, convertible	7	Jan'y, July	"	1858	-----	
Do. do.	200,000	Income, guar. Ol. Col. & Cia.	7	Feb'y, August	"	1859	-----	
Central Ohio	1,250,000	1st mort. conv. east sec.	7	Divers	"	1861-04	60	70
Do.	800,000	2d do, convertible	7	March, Sept.	"	1865	40	42
Cincinnati, Hamilton, and Dayton	500,000	1st mortgage, convertible	7	20.Jan. 20.July	"	1867	90	92½
Do. db.	465,000	2d do, do	7	May, Novemb.	"	1880	70	70½
Cincinnati and Marietta	2,500,000	1st mortgage, conv. till 1862	7	Jan'y, July	"	1868	-----	
Cincinnati, Wilmington, and Zanesville	1,300,000	Do, convertible	7	May, Novemb.	"	1862	-----	
Cleveland, Painesville, and Ashtabula	567,000	Do, convertible	7	Feb'y, August	"	1861	98	100
Cleveland and Pittsburgh	800,000	Do, convertible	7	Feb'y, August	"	1860	67	75
Cleveland and Toledo	1,200,000	Do, on Branches	7	March, Sept.	"	1873	60	67
Chicago and Mississippi	525,000	Do, convertible	7	Feb'y, August	"	1863	75	80
Do. do.	800,000	Do, conv. till 1857	7	April, October	"	1862-72	30	50
Covington and Lexington	1,200,000	Do, convertible	7	April, October	"	1862-72	30	50
Do. do.	400,000	Do, do	7	April, October	"	1867	60	65
Delaware, Lackawanna, and Western	1,000,000	2d mortgage, convertible	7	March, Sept.	"	1888	47	55
Florida Freedland	1,500,000	1st mortgage, do	7	April, October	"	1875	89	91
Fort Wayne and Chicago	1,250,000	Do, not convertible	7	March, Sept.	"	1891	77	78
Gaines and Chicago	2,000,000	Do, conv. till 1863	7	Jan'y, July	"	1878	-----	72½
Do. do.	2,000,000	2d mortgage, do	7	Feb'y, August	"	1863	92	94
Great Western (Illinois)	1,000,000	1st mortgage, do	7	May, Novemb.	"	1876	90%	91½
Green Bay, Milwaukee, and Chicago	400,000	Do, convertible	7	April, October	"	1868	-----	
Jeffersonville	300,000	Do, 2d sec. inconv.	7	8.April, 10.Oc.	"	1868	87	93
Indiana Central	600,000	Do, convertible	7	April, October	"	1873	-----	
Indianapolis and Bellefontaine	450,000	Do, do	7	May, Novemb.	"	1866	-----	55
Indianap. & Cinti (for Lawb. & U. M.)	500,000	Do, conv. till 1857	7	Jan'y, July	"	1860-61	70	80
La Crosse and Milwaukee	950,000	1st mort. 1st sec. conv. till 1864	7	March, Sept.	"	1866	83	85
Lake Erie, Wabash, and St. Louis	3,400,000	1st mortgage, conv. till 1860	7	May, Novemb.	"	1874	75	85
Little Miami	1,500,000	Do, inconvert.	7	Feb'y, August	"	1865	71	72
Michigan Central	1,000,000	No mortgage, convertible	7	2d May, 2. Nov.	"	1883	88	89
Do.	600,000	Do, do	7	April, October	"	1860	96	97
Milwaukee and Mississippi	600,000	1st mort. 1st sec. conv. till 1857	7	March, Sept.	"	1869	92	93
Do. do.	650,000	Do, 2d do	7	Jan'y, July	"	1862	80	
New Albany and Salem	1,250,000	Do, 3d do	7	April, October	"	1863	-----	71½
Do. do.	500,000	Do, 1st section	7	June, Decemb.	"	1877	67	72½
Northern Cross	2,325,000	Do, oth. sec. conv. till 1858	7	April, October	"	1858-62	-----	
Ohio and Indiana	1,200,000	1st mortgage, convertible	7	8.May, Novemb.	"	1864-75	90	
Ohio and Pennsylvania	1,000,000	Do, do	7	8.Jan'y, July	"	1873	75	
Pennsylvania (Central)	2,000,000	Income, convertible	7	7.Feb'y, August	"	1867	80	
Racine and Mississippi	5,000,000	1st mortgage, conv. till 1860	7	7.Jan'y, July	"	1865-66	69	70
Scioto and Hocking Valley	680,000	Do, conv., sink'g'd	7	7.April, October	"	1872	55	66
Steubenville and Indiana	300,000	Do, 1st sec. conv.	7	6.Jan'y, July	"	1875	75	
Terre Haute and Indianapolis	1,500,000	Do, convertible	7	5.May, Novemb.	"	1861	-----	
Terre Haute and Alton	600,000	Do, do	7	7.March, Sept.	"	1866	-----	
Do.	1,000,000	Do, do	7	7.Feb'y, August	"	1862-772	68	72

NAMES OF COMPANIES. (The following quotations include the accrued interest.)	Amount of Loan.	Description of Bonds.	Rate Int.	Interest pay- able.	Where payable.	Due.	Offered.	Asked.
Baltimore and Ohio	1,128,500	Mortgage	6	Jan'y, July	Balt.	1875	85	86½
Chicago and Rock Island	2,000,000	1st mortgage, conv. till 1868	7	10.Jan. 10.July	N.Y.	1870	94	95
Erie Railroad	3,000,000	1st mortgage	7	5.May, Novemb.	"	1867	96	97
Do.	4,000,000	2d mortgage, convertible	7	3.March, Sept.	"	1859	83	84
Do.	6,000,000	3d mortgage	7	3.March, Sept.	"	1883	72½	73
Do.	6,000,000	4th mortgage, not convertible	7	4.April, October	"	1880	56	57
Do.	4,000,000	Not conv. Sink Fund, \$420,000	7	2.Feb'y, August	"	1875	31	33
Do.	4,351,000	Convertible Incription	7	7.Feb'y, August	"	1871	30	31
Hudson River	3,500,000	Convertible	7	7.Jan'y, July	"	1862	30	32
Do.	4,000,000	1st mortgage, Incription	7	7.Feb'y, August	"	1860-70	102	102½
Do.	2,000,000	2d do, do	7	16.June, 16.Dec.	"	1860	94	94½
Do.	3,000,000	3d do, convertible	7	5.May, Novemb.	"	1870	76	77½
Illinoi Central (Free Land)	17,000,000	Mortgage, inconverntible	7	7.April, October	"	1870	90	91
Michigan Southern	3,000,000	M'ge 345,000 acres-prv. 7 shar's	7	7.March, Sept.	"	1860	91	91½
New York and Harlem	1,200,000	1st mortgage, inconverntible	7	7.May, Novemb.	"	1861-72	94	95
New York and New Haven	750,000	No mortgage, do	7	7.June, Decemb.	"	1855/60/60	96	98
New Haven and Hartford	1,000,000	1st mortgage, do	7	6.Jan'y, July	"	1873	90	94
Northern Indiana	1,000,000	Do, do	7	7.Feb'y, August	"	1861	80	83
Do. Goshen Branch	1,500,000	Do, do	7	7.Feb'y, August	"	1868	71	72½
New York Central	8,287,000	No mortgage, do	7	6.May, Novemb.	"	1883	92	93
Do. do.	3,000,000	o'mge conv. from June 57-59	7	7.June, 15.Dec.	"	1864	103	104
Panama, 1st issue	900,000	Convertible till 1856	7	7.Jan'y, July	"	1866	118	
Do. 2d do	1,477,000	Do, till 1868	7	7.Jan'y, July	"	1866	90	91
Reading	1,300,000	Mortgage, inconverntible	7	6.Jan'y, July	Phila.	1860	-----	
Do.	3,469,000	Do, convertible	7	6.Jan'y, July	"	1870	84	85
Do.	3,469,000	Do, inconverntible	7	6.April, October	"	1886	75	76

CITY SECURITIES.	Int'l payable	Ofr'd	Aesk'd	CITY SECURITIES	Int'l payable	Ofr'd	Aesk'd
New York, 5 per ct. 1858-'60	98	99		Milwaukee, 7 per ct. coupl.	X	Divers	45
Do. 5 do. 1870-'75	93	96		Do.	-----	75	80
Do. 6 do. 1888	103	104		N. Orleans, 6 per ct. ep. R.R.	X	Do.	-----
Do. 5 do. 1890-'93	92	95		Philadelphia, 6 per ct. ep. municip.	X	Jan'y, July	85
Albany, 6 per ct. comp. 1871-'81 X	Feb'y, August	98	101	Pittsburgh, 6 per ct. coupl.	X	Jan'y, July	98
Alleghany, 6 per ct. coup. ----- X	Jan'y, July	50	60	Divers	45	50	
Baltimore, 6 per ct. 1879-'90	Quarterly	99	100	Quincy, 8 per ct. coup. 1868	X	Jan'y, July	67
Boston, 6 per ct. coup. ----- X	April, October	100	101	Racine, 7 per ct. coupl. 1873 X	10.Feb'y, Aug.	-----	
Brooklyn, 6 per ct. coup. Long X	Jan'y, July	101	102	Rochester, 6 per cent. coup.	X	Divers	90
Clev'Pd, 7 per ct. ep. W.W. 1879 X	Do. do	100	103	Do.	-----	84	97½
Cincinnati, 6 per ct. coup. ----- X	Divers	92	95	Municipal. -- Long X	Do.	-----	86
Chicago, 6 per ct. coup. 1873-'77 X	Jan'y, July	85	87	Sacramento, 10 p.c. ep. 1862-'74 X	Do.	-----	87½
Do. 7 per ct. coup. 1880 X	Jan'y, July	97	98	S.Francisco, 7 p.a.c. 1865, pay. N.Y. X	May, Novemb.	60	70
Detroit, 7 per ct. ep. W.W. 1873-'78 X	Feb'y, August	100	102	Do. 10 p.c. ep. 1871 X	Do.	-----	89
Dubuque, 8 per ct. ep. Long X	March, Sept.	100	101	Do. 10 do. pay. N.Y. X	Jan'y, July	91	
Toronto City, 6 per ct. ep. W.W. 1877 X	Jan'y, July	99	101	Do. 6 per ct. pay. N.Y. 1875 X	Do. do	-----	61
Louisville, 6 per ct. ep. 1880-'83 X	Divers	71	73	Do. 6 per ct. coup. X	Divers	-----	50
Memp', 6 per ct. coup. 1882 X	Jan'y, July	4	57	Do. 6 p.d. pt. Mun. 1874 X	March, Sept.	80	81½
				Datesville, 7 do. ----- X	April, October		

Cincinnati Stock Sales.

By KIRK & CHEEVER.

For the week ending April 4, 1859.	BONDS.	Per cent.
Little Miami, 1st Mort.	6s.	53½ and int.
Covington and Lexington, 1st Mortgage	6s.	65
Do. do. 2d do.	7s.	50
Do. do. Income	10s.	10
Ohio & Miss. E D. Construction	7s.	
Cinc. Ham. and Dayton, 1st Mortgage	7s.	90
Do. do. 2d do.	7s.	82
Indianap. & Cincinnati, do. do.	7s.	80
Indiana & Cincinnati	STOCKS.	
Cincinnati, Hamilton & Dayton	58	
Columbus and Xenia	88	
Indianapolis & Cincinnati	57	
Little Miami	90	
Ohio and Mississippi (E. D.)	3	

Railroad Earnings.

The receipts of the Grand Trunk Railway of Canada for the week ending March 19,	were.	\$47,565 51
Week ending March 20, 1858	.....	45,711 88
Increase	.....	\$1,858 63
Total traffic from July 1st	.....	\$1,616,840 88
Same period last year	.....	1,708,486 10
Decrease	.....	\$86,595 72
The earnings of the Hudson River railroad in March, were	.....	\$175,773 23
March 1858.	.....	179,423 33
Decrease	.....	\$3,650 15
The receipts of the Brooklyn City railroad company in March, were	.....	\$35,822 65
March 1858	.....	26,508 47
Increase	.....	\$9,314 18
The earnings of the Chicago, Burlington and Quincy railroad proper, and the Galesburg branch, for March, were as follows:	.....
Chicago and Burlington.	(210 miles.)	Quincy and Chicago.
Freight	.....	\$12,947 99
Passengers	.....	15,587 06
Mails etc.	.....	872 33
Total	.....	\$90,063 81
Receipts per mile	.....	428 87
294 07		
The earnings of the Buffalo, New York and Erie railroad from Buffalo to Corning, 142 miles, for March, were:	.....
Passengers	.....	\$11,174 09
Freight	.....	35,949 88
Other sources	.....	1,540 17
		\$48,664 14
The earnings of the Michigan Southern railroad for March, were:	.....
		1858 1859
Passengers	.....	\$81,878 73
Freight	.....	61,966 08
Express and Miscell.	12,132 91	6

feeling seems to have prevailed on the occasion.

American Railroad Journal.

Saturday, April 9, 1859.

WOODEN BRIDGES.

We commence with this number the publication of a TREATISE on the construction of wooden bridges, by S. S. Post, Esq., Civil Engineer and late Chief Engineer of the New York and Erie railroad. The treatise commences with a statement of elementary principles, which are carried forward by regular and necessary inductions to their application to every kind of structure. There is probably no work of the kind, which comprises in so small a compass, full working details, with the principles on which they are based. It has been highly approved by such of our engineers as have had an opportunity to examine it, and we think we can commend it, to engineers and to railroad companies, as eminently worthy of their attentive study. It has the advantage of having all its terms and propositions stated in such a manner, as to be easily understood by any intelligent mechanic. Mr. Post is well known to be one of our most ingenious and best informed engineers, and has given particular attention to the subject on which he has written.

The La Mothe Patent Car.

The great strength and elasticity of riveted strips of thin iron as combined in the basket-like frame of the car patented by Dr. La Mothe, have been several times commented on in our columns. Iron which has been worked down into thin strips is universally sounder and stronger than the same metal in larger masses and the interweaving or alternation of the strips at the points where the bands intersect, and the riveting through at those points, gives a kind of mutual bracing to the work which is not paralleled in any other engineering construction, but is quite nearly approached to in some of the refined forms of bridges.

Recently, the management of several of the principal railroads connecting at Boston, have combined to test by practice, a car of full size, built according to this plan, and the construction will in a few weeks be completed and ready for trial. We have paid a visit to the shop of Mr. Cudell, at Paterson, where it is being finished, and the appearance of the work under the few tests of strength and stiffness to which it has been yet subjected argue very strongly for a complete revolution in this branch of business and the adoption of this system universally as very far preferable to any form of wooden car yet proposed.

The running parts will be those of the ordinary kind and of the ordinary weight, although they might evidently be made a little lighter, by reason of the difference in load they are to carry.—The body will weigh 9,000 lbs., which is only from one-half to two-thirds the weight of modern ones of the same size. It is intended to give a very great surplus of strength to this car, as the first on this principle of such size. There is little doubt that the weight of every car can be reduced two tons by adopting this system of construction, and secure a greater degree of strength and safety than at present. The effect of such light cars in reducing the expenses for motive power, repairs of track, etc., and increasing the capacity for use,

ful, paying load, it is difficult to fully appreciate. We are rejoiced to find that the initiative step is being taken.

Interest and Dividends.

The interest coupons on the Schuyler county (Ill.) bonds, due April 1, will be paid on presentation by Mills & Ray, No. 318 Broadway.

The interest coupons of the bonds issued by Shelby county, Ohio, to the Bellefontaine and Indiana railroad company, not presented on the 1st inst., at the American Exchange Bank, will have to be presented at the Treasurer's office, in Sidney, Ohio. The coupons on the Syracuse, Binghamton and New York railroad company's bonds, due 1st of April, are paid on presentation, at the Continental Bank.

Pacific Railroad of Missouri.

The total length of the main line of this road is 282 miles, extending from St. Louis, in a nearly due west direction, to Kansas City. We have before us the report of the officers of this company, made to the Board of Public Works, bearing date December 24, 1858. Up to that time, 163 miles of the road, from St. Louis to Tipton, had been completed, leaving 119 miles unfinished, of which 12 miles continuously west of Tipton, and a few difficult sections in Johnson county, were in progress. The grades between St. Louis and Jefferson City do not exceed 45 feet per mile; beyond that, 60 feet grades are encountered. With a single exception, there are no curves of a less radius than 1,432 feet on the entire road. The road is represented as being in very good condition between St. Louis and Jefferson City. West of that point it is new, and some portions of it had not been put in thorough order. The masonry and bridging on the road were regarded as substantial and safe, and the operations of the transportation department were being satisfactorily conducted. The earnings of the road for the year ending November 30th, 1858, were:—

	Work done.	Remaining to be done.	Total cost.
To Tipton	\$1,181,918	\$93,082	\$1,275,000
" Otterville	121,369	292,631	414,000
" Sedalia	10,260	259,740	270,000
" Knob Noster	6,727	419,273	426,000
" Warrens'burg	20,087	382,968	353,000
" Kingsville	506,000	506,000	
" Pleasant Hill	298,000	298,000	
" Independence	642,000	642,000	
" Kansas City	330,000	330,000	
			\$1,340,311 \$3,173,689 \$4,514,000

Total earnings \$636,511 74

The receipts from earnings of the road from the commencement of operations, to November 30, 1858, were:

	From passengers	\$1,060,282 70
" freight	754,081 78	
" mails	45,378 16	

Total receipts \$1,859,692 64

The transportation expenses during that period were . . . \$1,147,027 65

Expenses of Gasconade disaster 21,757 76

Cars destroyed and rebuilt 7,374 94

1,176,160 35

Net earnings to November 30, 1858. \$683,532 29

The interest charged to transportation department during the same time was 834,455 87

Showing a deficiency in 1858, of . . . \$150,923 58

In 1857, the deficiency was 179,600 03

In 1856, " " " 88,667 50

In 1855, " " " 44,348 51

The total amount subscribed to the capital stock of the main line is \$3,804,400. The amount collected \$3,146,170 26. The net proceeds of which, (after deducting \$189,882 50 for discounts and commissions on St. Louis city and county

bonds, received in payment therefor, and \$33,825 for commissions for collecting subscriptions west of Jefferson City,) is \$2,923,012 70. The amount of State bonds authorized for the main line is \$7,000,000; the amount issued to the company, \$6,780,000; the discounts and commissions, \$753,593 11. The net proceeds, \$6,026,406 89. The amount due the company the first of March was \$220,000.

The cost of the road to Jefferson City, exclusive of rolling stock and general expenses, is stated at \$5,974,958 75; the gross cost of the road to that point is \$7,542,353 78; the total amount expended on the main line, including discounts, commissions, etc., is \$10,038,823 05. The estimated cost of the road from Jefferson City to Kansas City is \$4,514,000; the additional means required for that purpose the board estimated at not less than \$8,500,000. The gross cost of the work done west of Jefferson is \$1,717,051 70. The gross cost of the rolling stock is \$774,417 60. The whole amount of debt due and to become due by the company, on the main line, exclusive of bonds, is put down at \$478,232 29. The whole amount due and to become due to the company, exclusive of unpaid instalments on stock is \$406,576 26—of this sum, \$68,045 11 is in litigation. The value of the remainder the board has no means of estimating.—The amount of interest to be paid by the company on State bonds and free land bonds on the main line, is \$408,410. The annual interest on the State bonds now issued is \$406,800—on the whole amount authorized, \$420,000.

The following statement of the estimated cost and progress of the work upon the main line from Jefferson City west, is extracted from a report made by the Chief Engineer to the Board of Directors in October last. The estimates are full and include graduation, masonry, bridging, superstructure, ballasting, fencing, buildings, etc., :

	Work done.	Remaining to be done.	Total cost.
To Tipton	\$1,181,918	\$93,082	\$1,275,000
" Otterville	121,369	292,631	414,000
" Sedalia	10,260	259,740	270,000
" Knob Noster	6,727	419,273	426,000
" Warrens'burg	20,087	382,968	353,000
" Kingsville	506,000	506,000	
" Pleasant Hill	298,000	298,000	
" Independence	642,000	642,000	
" Kansas City	330,000	330,000	
			\$1,340,311 \$3,173,689 \$4,514,000

The following is a brief statement of the quantity, condition, value, etc., of the lands donated to the State, for this company, by act of Congress passed June 10, 1852:

For main line—1st division 127,000 acres.

" South West Branch 1,040,000 "

Total 1,167,000 "

The former are free lands—not being subject to the mortgage to the State under the act of the General Assembly of December 10, 1855. These lands are situated in St. Louis, St. Charles, Jefferson, Washington, Franklin and Crawford counties; and embrace a large quantity of fair agricultural lands, a portion of the Pine lands of Washington county, and overlay one of the most varied, extensive, and richest mineral regions in the State—lead, copper and iron all being found upon them in large quantities. Of these lands, 1,225 acres have been sold—the greater portion of which was

purchased under pre-emption rights at \$2.50 per acre. The value of the remainder is put down in the report of the company's land agent at \$5—equal to \$628,875. On these lands there has been created a mortgage to secure the payment of \$600,000 of "Free land bonds." Of these bonds, \$373,000 have been used by the company; \$250,000 are hypothecated to secure the payment of \$136,000 for iron purchased in 1856; \$23,000 were sold to private individuals; and the remainder, \$227,000 are still in the possession of the company—the total incumbrance upon the free lands is therefore \$169,000. These lands have been recently examined, and are now being classified preparatory to being sold.

The portion applicable to the South West Branch are valued at \$10,425,000, and consists of agricultural, pastoral, timbered and mineral lands—extending the entire length of the branch. Upon them are large bodies of prairies, interspersed with abundant timber, and well watered; also, forests of pine, and the most extensive and richest deposits of mineral that have ever been worked. These lands have been mortgaged to secure the payment of bonds, to the amount of \$10,000,000; to be issued under it. Of these bonds \$4,500,000 have been guaranteed by the State; and \$132,000 of the guaranteed bonds, together with \$1,268,000 of direct bonds of the State (in lieu of guaranteed bonds) issued to the company—making the whole amount of direct and guaranteed bonds received by the company for the use of the South West Branch \$1,400,000, and leaving to be drawn \$3,100,000.

The total amount of stock subscribed is \$356,000—of which \$66,973 has been collected.

The discounts, commissions and interest amount to \$308,249 27. The interest on State bonds now issued is \$76,080; on guaranteed bonds at 7 per cent., \$9,240.

The length of the South West Branch of the Pacific railroad is 283 miles; 19 miles are completed and in use, and 43 more in progress of construction. The maximum grade, is 65 feet. The minimum radius of curvature at one point is 882 feet, upon a level grade. With this exception, the minimum radius, is 955 feet. The Chief Engineer is of opinion that a good road, with superstructure and buildings, can be obtained at the contract price, viz.: \$7,621,680. The total expenditures on the branch to November 30, 1858, were \$1,442,710 36—the amount of debt due on the same, \$84,281 86.

CONDENSED BALANCE SHEET, Nov. 30, 1858.

DR.

Capital stock—main line.....	\$3,263,684 65
Capital stock—South West Branch.....	66,973 33
Bonded debt—main line.....	\$6,803,000 00
Bonded debt—South West Branch.....	1,400,000 00
Premium received on bonds.....	\$8,203,000 00
Land grant sales and rents.....	71,594 30
Floating debt, main line.....	6,498 23
Floating debt, South West Branch.....	476,850 89
Due R. Benson & Co.	84,281 86
	1,381 40
	562,514 15
	\$12,174,264 66

CH.	OR.
Construction St. Louis to Jefferson.	\$5,974,953 75
" West of Jefferson....	1,360,217 16
" South West Branch..	1,104,010 89
Equipment	618,357 60
Interest, discount and commission, main line.....	1,961,400 09
Interest, discount and commission South West Branch.....	308,249 27
Office expenses, stationery, etc....	123,894 45
Land grant, including Geographical survey, South West Branch.....	30,450 20
Undistributed balances.....	54,835 18
Int. charged to transp.	\$834,455 87
Less net earnings.....	683,532 29
	150,923 58
Steamboat line balance of acounts.	51 04
Bills receivable.....	\$162,445 18
State bonds issued for	
South West Branch. 127,000 00	
Sundry accounts.....	152,229 86
Bonds of town of Hermann.....	500 00
Cash.....	49,746 41
	491,921 45
	\$12,174,264 66

The officers of the company are:

JOHN M. WIMER, President.

EDWARD MILLER, Chief Engineer.

T. MCKISSOCK, General Superintendent.

Car Springs and India Rubber.

In the last issue of the JOURNAL, we published an article under the above head, purporting to give the result of a suit in favor of the New England Car Spring Company, against Hiram P. Dunbar, et al. for an alleged violation of the rights of the former, in the manufacture of India Rubber Springs.

We have since seen the report of the Judge's (Grier) opinion, which gives an entirely different aspect to the case from that stated in the article referred to. The case was an application for a temporary injunction to restrain the defendants from the manufacture of Rubber Springs. The Judge, without intimating an opinion as to the merits of the case at issue, refused the injunction, but ordered the defendants to keep an account of all car springs made, and sold by them, as a basis for damages, in case of a final decision against them—no suggestion being made that they were insolvent, or that the plaintiffs were in danger of loss from not granting the injunction.

Houston and Texas Central Railroad.

We learn that this company has entered into a contract with Mr. Henry P. Adams, of this city, to construct eighty-two and a half miles of the road, commencing a few miles north of the Navisota, and extending to six miles west of Springfield, in Limestone county. Fifty miles are to be completed by the 1st of June, 1860, and the remainder by the 1st of November following. The contract price is \$21,000 per mile, of which \$3,000 is to be paid in stock, \$14,500 in thirty year bonds, and the remainder in cash and its equivalent.

Railroads in Maine.

We give herewith a statement of the railroads of Maine similar to that of the railroads of New Hampshire, presented last week. The roads described embrace all the lines of the State, with the exception of the Buckfield Branch, 13 miles, the Great Falls and South Berwick, 3½ miles, and the Franklin railroad, 9 miles. The first two are not in operation. The former is owned by one person, and may, we presume, be considered as abandoned as a public highway. It has been in use only a portion of the time since it was

opened, and no statistics are obtainable in reference to it. The Great Falls and South Berwick railroad has, we believe, never been in operation, and will very probably be abandoned. The Franklin railroad belongs to a manufacturing company and is used in the transportation of lumber, and cannot be regarded as a public highway.

The aggregate result of the operation of the railroads of the State since the opening of the first road in 1837, may be stated as follows:—Total cost, (that of the several years being added together)—\$129,151,337. Gross earnings \$10,795,861; current expenses, \$6,073,643; net earnings, \$4,722,218.

The general result is not a favorable one. The per centage of gross earnings to capital invested, has been at the rate of 8½ per cent.—net, do, at the rate of 3½ per cent. The large addition, from earnings, to construction, by some of the roads, particularly by the Atlantic and St. Lawrence is one reason for the comparatively small ratio of net earnings.

All the railroads of Maine, with the exception of the Atlantic and St. Lawrence, have a very light traffic in freight, owing to the almost unrivaled facilities for communication by water, which the State possesses.

RECAPITULATION

Showing the cost, earnings, etc., etc., of the Maine Railroads, from the opening of the Bangor, Oldtown and Milford Railroad to the present time.

Year.	Length.	Cost.	Gross Receipts.	Current Expenses.	Net Receipts.	Passengers.	Freight.	Do. Miscellaneous.	Do. Miles.
1838—1842...	60	\$1,794,739	\$86,217	\$55,829	\$20,388	Aggreqate of B., O. & M. for 5 yrs.	\$1,885	\$2,320	9,062
1843.....	63	1,426,933	47,918	34,900	18,018		10,957		
1844.....	63	1,537,722	124,842	60,176	64,666				
1845.....	63	1,615,489	150,180	64,131	76,049	106,137	18,138	7,128	
1846.....	63	1,628,739	150,248	70,109	80,139	98,991	18,503	8,702	
1847.....	63	1,639,556	173,209	72,723	100,486	120,454	19,157	8,674	
1848.....	63	1,406,824	194,636	78,842	115,788	129,344	20,891	10,568	
1849.....	111	2,927,091	293,799	124,319	169,488	190,707	62,300	10,410	
1850.....	111	3,070,854	361,912	212,069	234,890	82,903	16,629		
1851.....	254	8,219,648	571,204	270,565	300,659	256,170	178,047	27,987	
1852.....	349	11,188,350	711,459	340,770	370,659	428,980	247,468	35,010	
1853.....	385	12,998,566	963,416	467,329	496,087	518,778	361,039	46,384	
1854.....	385	13,625,760	1,236,037	658,401	577,636	635,988	543,137	58,218	
1855.....	386	14,063,040	1,388,616	817,697	570,919	677,936	562,580	58,406	
1856.....	460	16,895,303	1,524,960	987,182	537,778	736,671	724,367	63,922	
1857.....	478	17,077,646	1,429,255	559,389	469,762	655,588	720,376	667,376	69,420
1858.....	507	18,070,687	1,387,884	841,369	445,515	620,085	667,376		
		\$129,151,337	\$10,795,861	\$6,073,643	\$4,722,218	\$5,523,368	\$4,239,506	\$487,718	

RAILROADS IN MAINE.										
Statement showing the cost, earnings, etc., etc., of all the Railroads of Maine, from the opening of the first road to the present time.										
Name of Road.	Length.	Cost.	Gross receipts.	Current expenses.	Net re-ceipts.	Rec'd from pass'gers.	Rec'd from freight.	Do. miscellaneous.	Divid.-end.	
Bangor, Oldtown and Milford, 1838.....	12	\$354,000	\$19,551	\$14,577	\$4,973	.....	.....	.....	..
Do. do. 1839.....	12	354,000	19,634	14,501	5,133	.....	.....	.....	..
Do. do. 1840.....	12	354,000	16,324	13,888	2,427	.....	.....	.....	..
Do. do. 1841.....	12	354,000	11,843	9,620	3,222	.....	.....	.....	..
Do. do. 1842.....	12	378,739	18,865	13,243	5,622	.....	.....	.....	..
1843.										
Bangor, Oldtown and Milford.....	12	\$378,739	\$16,599	\$13,918	\$2,681	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,048,194	31,319	20,982	10,337	\$26,614	\$1,885	\$2,820	6	
Total.....	63	\$1,426,933	\$47,918	\$34,900	\$13,018					
1844.										
Bangor, Oldtown and Milford.....	12	\$378,739	\$19,897	\$14,127	\$5,769	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,158,983	104,945	46,049	58,897	\$84,926	\$10,967	\$9,062	6	
Total.....	63	\$1,537,722	\$124,842	\$60,176	\$64,666					
1845.										
Bangor, Oldtown and Milford.....	12	\$378,739	\$18,776	\$12,309	\$6,467	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,236,750	131,404	51,822	79,582	\$106,137	\$18,138	\$7,128	6	
Total.....	63	\$1,615,489	\$150,180	\$64,131	\$76,049					
1846.										
Bangor, Oldtown and Milford.....	12	\$378,739	\$23,851	\$14,624	\$9,226	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,250,000	126,397	55,485	70,913	\$98,991	\$18,503	\$8,702	6	
Total.....	63	\$1,628,739	\$150,248	\$70,109	\$80,139					
1847.										
Bangor, Oldtown and Milford.....	12	\$378,739	\$24,921	\$17,271	\$7,650	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,260,817	148,288	55,452	92,836	\$120,454	\$19,157	\$8,574	6	
Total.....	63	\$1,639,556	\$173,209	\$72,723	\$100,486					
1848.										
Bangor, Oldtown and Milford.....	12	\$135,000	\$33,805	\$19,617	\$14,188	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,271,824	160,825	59,225	101,600	\$129,344	\$20,891	\$10,568	6	
Total.....	63	\$1,406,824	\$194,636	\$78,842	\$115,788					
1849.										
Atlantic and St. Lawrence.....	48	\$1,500,000	\$108,662	\$43,000	\$65,662	\$66,893	\$41,769	.....	..
Bangor, Oldtown and Milford.....	12	135,000	30,382	23,133	7,249	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,292,091	154,755	58,186	96,569	123,814	20,531	\$10,410	6	
Total.....	111	\$2,927,091	\$298,799	\$124,319	\$169,480	\$190,707	\$62,300			
1850.										
Atlantic and St. Lawrence.....	48	\$1,642,214	\$143,631	\$59,594	\$84,037	\$79,148	\$57,490	\$6,993	..	
Bangor, Oldtown and Milford.....	12	135,000	27,549	17,482	10,067	.....	.....	.....	..
Portland, Saco and Portsmouth.....	51	1,293,640	190,801	72,836	117,965	155,751	25,413	9,636	6	
Total.....	111	\$3,070,854	\$361,981	\$149,912	\$212,069	\$234,899	\$82,903	\$16,629		
1851.										
Androscoggin and Kennebec.....	55	\$1,816,770	\$102,647	\$63,549	\$39,098	\$60,023	\$37,732	\$4,892	..	
Atlantic and St. Lawrence.....	91	2,826,175	173,447	70,219	103,228	81,005	80,321	12,122	..	
Bangor, Oldtown and Milford.....	12	135,000	30,161	16,413	13,748	14,988	185	..	..
Kennebec and Portland.....	35	1,742,370	67,300	30,300	37,000	49,300	18,000	..	..
Portland, Saco and Portsmouth.....	51	1,300,323	187,605	80,792	106,813	150,847	25,969	10,789	6	
York and Cumberland.....	10	399,010	10,044	9,292	752	9,007	1,037	..	..
Total.....	254	\$8,219,648	\$571,204	\$270,565	\$300,639	\$265,170	\$178,047	\$27,987		
1852.										
Androscoggin and Kennebec.....	55	\$2,009,188	\$125,658	\$58,079	\$67,579	\$67,088	\$52,208	\$6,362	..	
Atlantic and St. Lawrence.....	149	4,735,258	200,234	108,986	91,248	86,577	100,611	13,046	..	
Bangor, Oldtown, Milford.....	12	135,000	31,702	18,011	13,691	16,752	14,753	197	..	
Calais and Baring.....	6	185,000	14,616	4,992	9,624	809	12,656	1,151	8	
Kennebec and Portland.....	66	2,181,000	122,290	50,000	72,290	92,290	30,000	..	..
Portland, Saco and Portsmouth.....	51	1,301,883	201,265	90,029	111,236	154,115	32,895	14,254	6	
York and Cumberland.....	10	641,021	15,694	10,673	5,021	11,349	4,345	..	..
Total.....	349	\$11,188,350	\$711,459	\$340,770	\$370,689	428,980	\$247,468	\$35,010		
1853.										
Androscoggin.....	20	\$315,365	\$19,141	\$10,000	\$9,141	\$9,168	\$9,555	\$428	..	
Androscoggin and Kennebec.....	55	2,020,247	140,461	60,507	79,954	71,647	63,210	5,704	..	
Atlantic and St. Lawrence.....	149	5,763,752	316,036	193,513	122,523	130,435	167,733	17,768	3	
Bangor, Oldtown and Milford.....	12	135,000	42,372	18,654	23,718	.....	.....	..	..
Calais and Baring.....	6	198,468	25,721	9,804	15,917	1,700	23,769	252	8	
Kennebec and Portland.....	72	2,514,067	168,118	67,561	100,552	127,127	33,604	7,381	..	
Portland, Saco and Portsmouth.....	51	1,302,458	222,981	91,563	131,418	158,901	49,570	14,508	6	
York and Cumberland.....	20	748,699	28,591	15,727	12,864	14,800	13,598	198	..	
Total.....	386	\$12,998,056	\$968,416	\$467,820	\$496,087	\$513,778	\$361,039	\$46,284		

1854.									
Androscoggin	20	\$843,317	\$29,782	\$16,975	\$12,807	\$13,916	\$15,145	\$1,726	..
Androscoggin and Kennebec	55	2,176,506	161,321	67,950	98,371	85,596	68,283	7,441	..
Atlantic and St. Lawrence	149	6,019,904	470,648	311,598	159,050	153,616	296,890	20,141	6
Bangor, Oldtown and Milford	12	135,000	44,189	22,150	22,039	22,595	21,594	..	..
Calais and Baring	6	217,255	28,038	11,821	16,217	1,361	25,409	1,268	..
Kennebec and Portland	72	2,605,365	208,568	94,499	114,069	153,162	43,102	12,303	..
Portland, Saco and Portsmouth	51	1,363,395	262,779	108,720	154,059	189,094	58,350	15,334	6
York and Cumberland	20	765,018	30,712	24,688	6,024	16,348	14,364	..	..
Total	385	\$13,625,760	\$1,236,037	\$658,401	\$577,636	\$635,688	\$543,137	\$58,213	..
1855.									
Androscoggin	20	\$863,551	\$29,782	\$16,975	\$12,807	\$13,916	\$14,145	\$1,721	..
Androscoggin and Kennebec	55	2,245,020	190,604	99,807	90,797	97,940	85,188	7,474	..
Atlantic and St. Lawrence	149	6,194,240	542,488	386,455	156,033	154,094	367,943	20,451	6
Bangor, Oldtown and Milford	12	178,233	47,349	22,484	24,865	29,086	28,086	177	..
Calais and Baring	6	224,000	31,640	16,616	16,024	1,420	28,890	1,330	..
Kennebec and Portland	72	2,766,677	228,566	114,104	114,462	167,438	49,042	12,086	..
Portland, Saco and Portsmouth	51	1,317,605	278,919	136,788	142,131	202,361	62,161	14,397	6
York and Cumberland	20	774,714	39,268	25,468	13,800	21,372	17,125	771	..
Total	385	\$14,064,040	\$1,388,616	\$817,697	\$570,919	\$677,636	\$652,580	\$58,403	..
1856.									
Androscoggin	20	\$454,277	\$25,209	\$16,826	\$8,883	\$11,080	\$12,845	\$1,284	..
Androscoggin and Kennebec	55	2,210,947	209,475	99,676	109,799	107,417	94,931	7,129	..
Atlantic and St. Lawrence	149	6,368,576	565,168	461,312	108,856	151,805	393,072	20,290	6
Bangor, Oldtown and Milford	12	178,233	35,696	17,798	17,898	18,106	17,490	100	..
Calais and Baring	6	224,566	37,172	16,973	20,199	2,521	33,201	1,450	4
Kennebec and Portland	72	2,871,264	204,367	138,747	65,620	142,059	51,826	10,482	..
Penobscot and Kennebec	55	1,723,408	*145,478	70,429	75,049	94,436	44,655	6,387	..
Portland, Saco and Portsmouth	51	1,359,218	270,214	138,921	131,293	192,885	61,299	16,029	6
Somerset and Kennebec	20	700,000	Run by the Kennebec and Portland R. R.	..	..	..	..	..	..
York and Cumberland	20	774,714	32,181	27,000	5,181	16,362	15,048	771	..
Total	460	\$16,865,203	\$1,524,960	\$987,182	\$537,778	\$736,671	\$724,367	\$63,922	..
1857.									
Androscoggin	26	\$555,897	\$25,365	\$13,489	\$11,876	\$10,976	\$13,051	\$1,338	..
Androscoggin and Kennebec	55	2,210,947	258,534	117,673	140,861	135,236	113,383	9,915	..
Atlantic and St. Lawrence	149	6,954,828	567,644	500,342	67,301	154,276	402,799	19,408	6
Bangor, Oldtown and Milford	13	178,307	32,725	16,362	16,363	15,110	17,411	204	..
Calais and Baring	6	224,000	32,381	13,720	18,661	2,407	28,558	1,416	..
Kennebec and Portland	72	2,871,264	219,886	147,706	72,180	139,574	66,958	13,354	..
Penobscot and Kennebec	55	1,950,341	Run by the Androscoggin and Kennebec R. R.	..	..	..	..	..	..
Portland, Saco and Portsmouth	51	1,359,573	253,707	121,010	132,697	189,487	56,104	8,116	6
Somerset and Kennebec	37	734,389	Run by the Kennebec and Portland R. R.	..	..	..	..	..	..
York and Cumberland	20	398,000	30,070	29,186	984	16,792	12,493	785	..
Total	478	\$17,077,546	\$1,429,251	\$959,389	\$469,762	\$653,858	\$720,757	\$54,636	..
1858.									
Androscoggin	33	\$645,271	\$30,957	\$13,693	\$17,263	\$10,877	\$18,609	\$1,471	..
Androscoggin and Kennebec	55	2,210,947	279,149	133,255	145,894	144,308	118,273	16,568	..
Atlantic and St. Lawrence	149	7,077,379	545,791	395,567	150,224	146,871	380,155	18,765	6
Bangor, Oldtown and Milford	13	175,232	33,059	16,529	16,530	12,870	19,895	294	..
Calais and Baring	6	224,000	28,383	15,984	12,399	1,697	25,676	1,010	..
Kennebec and Portland	72	2,871,264	165,074	94,328	70,746	87,591	54,977	22,506	34
Lewey's Island	16	310,000	12,950	7,000	5,950	2,100	10,550	..	..
Penobscot and Kennebec	55	1,874,831	Run by the Androscoggin and Kennebec R. R.	..	..	..	..	..	..
Portland, Saco and Portsmouth	51	1,500,000	211,997	110,498	101,499	155,954	48,029	8,014	6
Somerset and Kennebec	37	783,763	*50,000	*30,000	20,000	25,000	25,000	..	..
York and Cumberland	20	398,000	30,524	24,519	6,005	13,817	15,907	800	..
Total	507	\$18,070,687	\$1,387,884	\$841,369	546,515	\$620,085	\$667,376	\$69,420	..

* Estimated.

Baltimore and Ohio Railroad.

From the following communication it will be seen that this company will probably pay regular dividends hereafter in April and October. The communication is in answer to a resolution of inquiry passed by the Baltimore City Council:

BALTIMORE AND OHIO RAILROAD,
PRESIDENT'S OFFICE, April 1, 1859.

John W. Randolph, Esq., Chairman:

SIR: Your communication of the 16th ultimo was received during my absence from the city.

In reference to your inquiry regarding the probability of the Baltimore and Ohio railroad company paying a dividend in April and October of this year, and the amount of dividend that may be paid, I respectfully state that the net earnings and present financial condition of the company will justify a dividend of 3 per cent., for the fiscal half year terminating 31st ultimo, which doubtless the Board will declare at an early day.

As the company is now free from floating debt, I see no cause, with judicious management and no extraordinary disasters, to prevent the payment of regular dividends hereafter.

Very respectfully, your obedient servant,

J. W. GARRETT, President.

The Board subsequently met and organized by the re-election of the present officers: President, J. Edgar Thomson; Vice President, J. K. Edgerton; Acting President, T. Haskins Du Puy.

The report of the President, J. Edgar Thomson, Esq., was read. From it we learn that the capital stock of the company, on the 31st of December last, was \$6,266,555; amount of mortgage bonds on real estate and road to date, \$9,029,765; floating debt of all classes, \$1,755,982. Total cost of road and equipment, \$14,631,110; cost of real estate to the company, \$971,604, which, together with stocks and bonds of other companies, fuel on road and materials on hand, cash and bills receivable, accounts good and bad (including \$69,581 due to Gen. Larimer), mortgage bonds and notes, coupons, &c., amount to a total of \$17,046,252. The earnings of the road during the year 1858 were \$1,567,232; expenditures for all, \$1,651,170,

showing an excess of latter for the year of \$82,938 26. The total earnings of 1857, \$1,660,424; of 1858, \$1,567,232; decrease, \$93,162. The expenses of 1858, as compared with those of 1857, show a decrease of \$103,117 73.

Panama Railroad.

At the annual meeting of this company for the election of directors held on the 4th inst., the following gentlemen were unanimously chosen:—Messrs. David Hoadley, William H. Aspinwall, Edwin Bartlett, Henry Chauncey, Samuel W. Comstock, Edward Cunard, William Fellowes, Gouverneur Kemble, Theodore W. Riley, James T. Scudder, John Steward, Jr., Isaac Townsend, and William Whiteright, Jr.

Milwaukee Railroads

Statement of Monthly Earnings of Railroads entering Milwaukee.

MILWAUKEE AND MISSISSIPPI RAILROAD.

Passengers.	Freight.	Mail & Mis.	Total.
Jan. \$15,979 32	25,817 12	1,375 00	43,181 44
Feb. 14,156 58	24,534 65	1,305 00	39,896 23
Mar. 21,184 39	29,285 33	1,494 66	51,934 38
April. 33,990 06	49,798 33	1,216 66	76,005 95
May. 30,410 83	55,110 83	1,216 66	86,787 82
June. 29,422 81	73,060 09	1,216 66	103,699 56
July. 29,353 12	68,215 72	1,877 60	99,446 44
Aug. 26,617 85	32,641 56	1,877 61	66,137 02
Sep. 29,607 73	75,419 04	1,877 61	106,904 38
Oct. 34,635 64	55,963 17	1,877 61	92,467 42
Nov. 19,780 12	41,710 03	1,880 41	63,350 56
Dec. 20,696 58	30,334 83	1,384 41	53,415 82

\$805,805 83 557,900 20 19,479 89 883,186 02

Comparative Monthly Statement.

1856.	1857.	1858.
January ... \$36,589 02	28,461 23	48,181 44
February ... 28,531 64	34,107 55	39,896 23
March 30,563 86	40,591 30	51,934 38
April..... 35,521 39	45,986 75	76,005 95
May 61,367 39	81,478 88	86,787 82
June..... 66,086 12	118,443 49	103,699 56
July 53,070 69	91,364 06	99,446 44
August.... 56,564 62	80,784 09	66,137 02
September.. 92,856 90	123,007 99	106,904 38
October.... 120,146 52	115,920 69	92,467 42
November... 55,779 13	81,093 98	63,350 56
December... 38,403 30	41,577 93	53,415 82

\$660,680 58 882,817 89 883,186 02

MILWAUKEE, WATERTOWN AND BARABOO VALLEY RAILROAD.

Passenger.	Freight.	Mail.	Total.
March. \$2,063 07	4,899 08	266 66	7,228 81
April. 2,383 44	5,811 37	373 81	8,568 62
May ... 2,456 08	8,792 32	365 10	11,613 50
June... 2,414 70	11,697 25	360 60	14,472 55
July... 2,927 03	10,912 43	364 00	14,203 46
August... 2,583 10	7,533 60	387 49	10,504 19
Sept. ... 3,055 24	16,595 01	441 74	20,091 99
Oct. ... 2,730 96	11,274 12	375 79	14,380 87
Nov. ... 2,385 17	8,636 77	379 80	11,401 74
Dec. ... 1,950 52	6,605 03	379 56	8,935 11

\$24,549 31 92,756 98 3,694 55 121,400 84

LA CROSSE AND MILWAUKEE RAILROAD.

Passenger.	Freight.	Mail.	Total.
Jan. \$10,702 07	12,758 24	775 86	24,236 17
Feb. 8,946 46	10,651 00	437 92	20,035 38
Mar. 12,679 38	13,040 48	544 70	26,264 56
April. 13,785 21	17,852 25	2,063 03	33,690 49
May. 17,942 92	23,808 76	632 74	42,379 43
June. 15,043 54	28,153 79	678 21	43,875 54
July. 17,316 34	28,267 40	2,025 27	47,600 01
Aug. 16,885 08	20,029 05	941 17	61,551 54
Sept. 23,714 34	37,248 03	2,339 18	63,301 55
Oct. 28,857 87	32,255 48	767 99	61,551 54
Nov. 27,008 05	26,944 10	1,054 83	55,001 98
Dec. 18,868 92	18,937 58	4,516 55	36,823 65

\$205,745 19 269,941 16 16,767 45 492,458 81

MILWAUKEE AND CHICAGO RAILROAD.

Passengers.	Freight.	Mail.	Total.
Jan. \$9,800 21	4,889 03	271 31	14,460 55
Feb. 7,938 12	3,908 29	1,869 85	13,216 26
Mar. 11,685 14	5,493 13	289 84	17,468 11
April. 14,469 50	4,575 25	1,112 07	20,156 82
May. 12,256 43	3,110 91	1,686 20	18,053 54
June. 12,836 61	2,508 30	1,885 79	17,230 70
July. 12,791 42	2,556 35	1,200 22	16,547 99
Aug. 12,088 58	2,129 68	683 06	14,901 32
Sept. 13,800 95	3,032 61	1,653 87	17,887 43
Oct. 14,709 04	5,226 16	565 01	20,500 21
Nov. 12,467 90	2,940 23	1,557 35	17,965 48
Dec. 10,242 94	4,993 46	561 34	15,797 74

DETROIT AND MILWAUKEE RAILROAD.

January	\$18,522 49
February	16,134 34
March.....	21,520 21 ^{1/2}
April.....	31,279 75
May	29,017 35 ^{1/2}
June.....	24,934 23
July	26,626 57
August.....	31,570 60
September.....	49,215 80
October.....	46,149 53
November.....	36,529 69
December.....	31,089 39

\$362,589 39



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OF THE

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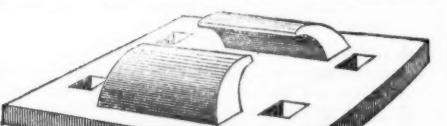
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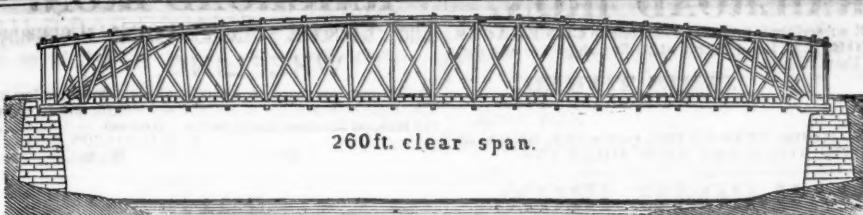
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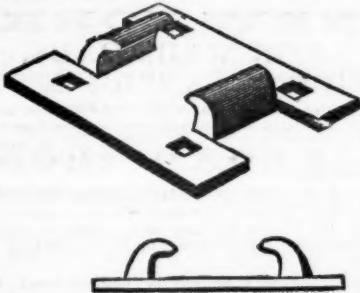
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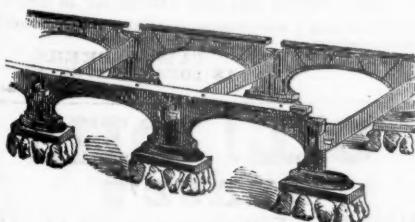
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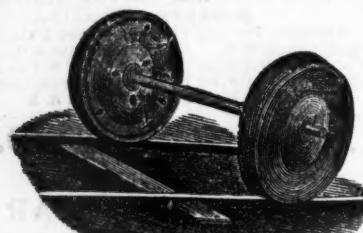
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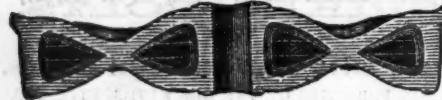
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